

Towsif Alam Chowdhury

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EDUCATION

North South University

Dhaka, Bangladesh

Bachelor of Science in Computer Science and Engineering

Jan 2017 – Apr 2021

CGPA - 3.60/4.00 | Distinction - Cum Laude | Specialized Trail - Artificial Intelligence

PUBLICATIONS

Patent

- Hossain, Md. I., **Chowdhury, T. A.**, Polin, Md. Z. H., & Mahmud, S. (2025). **Method and apparatus for providing MCPTT service**. U.S. Patent [US20250056190](#), February 13, 2025; WIPO Patent [WO2025033863](#), February 13, 2025; KIPO Patent [KR1020250021850](#), February 14, 2025.

Journal Paper

- Youme, S. K., **Chowdhury, T. A.**, Ahamed, H., Abid, M. S., Chowdhury, L., & Mohammed, N. (2021). **Generalization of Bangla Sign Language Recognition Using Angular Loss Functions**. IEEE Access, 9, 165351–165365. [doi:10.1109/ACCESS.2021.3134903](#)

Conference Paper

- Youme, S. K., Abid, M. S., **Chowdhury, T. A.**, Ahamed, H., & Siddique, S. (2022). **Local Climate Zone Mapping Using Clustering Algorithms: A Case Study of Dhaka, Bangladesh**. IGARSS 2022 - 2022 IEEE International Geoscience and Remote Sensing Symposium, 3139–3142. [doi:10.1109/IGARSS46834.2022.9883206](#)

EXPERIENCE

Samsung R&D Institute Bangladesh

Sep 2022 – Present

Patent Engineer

Dhaka, Bangladesh

- Collaborating with engineers and researchers to identify novel, non-obvious inventions, ensuring technical feasibility and commercial viability
- Conducted prior art searches and provided strategic guidance on intellectual property protection in emerging technologies
- Reviewed and assessed multiple innovation disclosures, leading to the publication of seven patents across various patent offices

Department of Electrical and Computer Engineering, North South University

May 2021 – May 2022

Research Assistant

Dhaka, Bangladesh

- Secured a competitive university research grant to explore improvements in reinforcement learning through memory optimization techniques
- Proposed and developed a novel reinforcement learning algorithm incorporating double replay memory, enabling the agent to balance short-term adaptability with long-term event retention

Department of Electrical and Computer Engineering, North South University

Mar 2020 – Jan 2022

Teaching Assistant

Dhaka, Bangladesh

- Led tutorials and discussion sections, held weekly office hours, and provided academic support to students
- Graded assignments and exams, and prepared answer keys and supplementary materials to aid instruction

Department of Mathematics and Physics, North South University

Oct 2021 – Apr 2022

Lab Instructor

Dhaka, Bangladesh

- Independently conducted undergraduate lab classes and provided academic consultation to students
- Assessed student performance through evaluation and grading of lab work and reports

GRANT

High-performance, Less Resource-intensive Deep Reinforcement Learning Methods for Applications in Autonomous Agents and Search and Rescue Robotics

Name of Grant: CTRG 2021-2022 | **Granting Body:** North South University, Dhaka, Bangladesh

Grant Amount: BDT 500,000 | **Role:** Research Assistant

- Conducted research on deep reinforcement learning algorithms, focusing on resource efficiency and performance optimization for use in autonomous systems and robotics
- Contributed to algorithm design, implementation, and analysis

AWARDS

Excellence Award, Samsung R&D Institute Bangladesh (2024)

Recognized for outstanding contributions to achieving Samsung R&D Institute Bangladesh's 2024 patent target through innovative research and collaboration with cross-functional teams.

PROJECTS

Catastrophic Forgetting in Reinforcement Learning

North South University | Spring 2020 (*Team of 4*) | [[GitHub Link](#)]

- Developed a double replay memory architecture inspired by cognitive learning systems, enhancing learning efficiency in deep reinforcement learning
- Implemented a loss selection strategy for prioritizing significant experiences, improving sampling efficiency, and reducing overfitting
- Secured a university grant for the project

Bangla Hand Sign Recognition

North South University | Fall 2019 (*Team of 3*) | [[GitHub Link](#)]

- Developed and evaluated a deep learning model for Bangla Sign Language (BdSL) recognition
- Implemented the ArcFace angular margin loss function, noting its aim to increase inter-class distance and reduce intra-class distance for classification
- Conducted a comparative analysis of angular margin loss functions against Softmax loss

TECHNICAL SKILLS

Programming languages: Python, C

Libraries: Pytorch, Tensorflow, Pandas, Matplotlib

Research domains: Machine Learning, Deep Learning, Computer Vision, Reinforcement Learning

LANGUAGE PROFICIENCY

IELTS: Overall band score – 8.0 (Listening 8.5; Reading 9.0; Writing 7.0; Speaking 7.0)

REFERENCES

1. Dr. Shahnewaz Siddique, Associate Professor

Department of Electrical and Computer Engineering, North South University

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2. Dr. Nabeel Mohammed, Associate Professor

Department of Electrical and Computer Engineering, North South University

Email: nabeel.mohammed@northsouth.edu

3. Nizam Khan, Principal Engineer

Innovation, Research, and IP Management, Samsung R&D Institute Bangladesh

Email: nizam.khan@samsung.com